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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,544	01/24/2002	Manabu Mukai	218429US2SRD	3300

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EXAMINER	
NGUYEN, HUY D	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,544	MUKAI ET AL.	
	Examiner	Art Unit	
	Huy D Nguyen	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6,7,9,10,12-19,22,23 and 25-28* is/are rejected.

7)☒ Claim(s) *3-5,8,11,20,21 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12082004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims rejected under 35 U.S.C. 102(e) as being anticipated by Davenport (U.S. Patent Application Publication US 2002/0082044).

Regarding claims 1, 6, 12, 16, and 22, Davenport teaches a mobile radio communication apparatus applicable to a plurality of radio communication systems, comprising: a wireless transmitter-receiver device configured to perform transmission/reception of a radio signal; a signal processing device including a resource to which functions are defined, wherein the resource handles at least a modem function and a protocol function, and configured to perform a signal processing necessary in the transmission/reception by use of the resource; and a controller which controls said signal processing device to redefine, to the resource, another modem function and another protocol function corresponding to respective one of the mobile communication systems (paragraphs 0011-0013).

Regarding claim 2, Davenport teaches the mobile radio communication apparatus according to claim 1, wherein said signal processing device comprises: a general-use processor serving as a part of said resource and configured to carry out a part of said signal processing by executing a given program; and a signal processing unit serving as another part of said resource

and configured to carry out another part of said signal processing; and said general-use processor comprises a register array configured to retain data directly transmitted/received between the general-use processor itself and the signal processing unit (paragraph 0011).

Regarding claims 7, 9-10, Davenport teaches the mobile radio communication apparatus according to claim 6, wherein said controller acquires structure description information indicating a structure of said newly requested signal processing function provided from an outside of said radio communication apparatus, and controls said signal processing device to define, to the resource, the newly required signal processing function in accordance with a resource amount necessary for defining the newly required signal processing function of the resource and an excessive residual resource amount, with use of the acquired structure description information (paragraphs 0011-0012).

Regarding claim 13, Davenport teaches the mobile radio communication apparatus applicable to a plurality of radio communication systems, comprising: a wireless transmitter-receiver device configured to perform transmission/reception of a radio signal; a signal processing device including a resource capable of redefining a signal processing function based on a predetermined software module, and configured to perform a signal processing necessary in the transmission/reception by use of the resource; and a storage device configured to store a plurality of software modules respectively corresponding to said plurality of radio communication systems; and a controller which reads out at least one software module corresponding to one of the mobile communication systems which is used by said mobile radio communication apparatus from said storage device , and controls said signal processing device

and said storage device to supply the read-out software module to the resource (paragraphs 0011-0013).

Regarding claim 14, Davenport teaches the mobile radio communication apparatus according to claim 12, wherein said controller characterized by comprises: a resource manager configured to manage a timing for determining a rewriting order of the software modules in the resource, whether or not the software modules should be rewritten, and a timing for rewriting; and a rewrite processor configured to read out a predetermined one of the software modules from said storage device based on an instruction from said resource manager and to assign the read-out module to the resource thereby rewriting the software modules in the resource (paragraphs 0011-0013).

Regarding claim 15, Davenport teaches the mobile radio communication apparatus according to claim 12, wherein said controller comprises: a resource manager configured to manage a timing for determining a rewriting order of the software modules in the resource, whether or not the software modules should be rewritten, and a timing for rewriting; a download buffer configured to buffer at least one software module downloaded from outside; and a rewrite processor configured to read out at least one software module from at least one of said storage device and said download buffer based on an instruction from said resource manager and to assign the read-out module to the resource thereby rewriting the software modules in the resource (paragraphs 0011-0013).

Regarding claim 23, Davenport teaches the mobile radio communication apparatus according to claim 22, wherein said controller includes a processor; said first converter device executes conversion as said processor executes a first software for conversion; and said second

converter device executes conversion as said processor executes a second software for conversion (paragraphs 0011-0013).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davenport in view of Bosch (U.S. Patent No. 6,519,601).

Regarding claims 17-19, Davenport teaches the mobile radio communication apparatus according to claim 16 except that the storage device stores a use frequency of each of said plurality of software modules in the table as a use log of each of the software modules; and said controller controls said storage device to rewrite the software modules by deleting one software module with a minimum use frequency of said plurality of software modules stored in said storage device with reference to the table. However, the preceding limitation is taught in Bosch (Col. 31, lines 42-53). It would been obvious to one of ordinary skill in the art, at the time of the invention, to apply the teaching of Bosch to the teaching of Davenport to conserve memory space.

5. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davenport in view of Johnson (U.S. Patent No. 6,366,578).

Regarding claim 25, Davenport teaches the mobile radio communication apparatus according to claim 22 except that the application software includes a telephone directory management software and said storage device stores a telephone number file as the first and second data files. However, the preceding limitation is taught in Johnson (Col. 18, lines 5-36). It would been obvious to one of ordinary skill in the art, at the time of the invention, to apply the teaching of Johnson to the teaching of Davenport to improve system flexibility.

Regarding claim 26, Davenport teaches the mobile radio communication apparatus according to claim 22 except that the application software includes a browsing software for Web pages and said storage device stores a URL (uniform resource locators) file as the first and second data files. However, the preceding limitation is taught in Johnson (Col. 15, lines 9-19). It would been obvious to one of ordinary skill in the art, at the time of the invention, to apply the teaching of Johnson to the teaching of Davenport to improve system flexibility.

Regarding claims 27-28, Davenport teaches the mobile radio communication apparatus according to claim 22 except that the application software includes an e-mail software and said storage device stores an e-mail file as the first and second data files. However, the preceding limitation is taught in Johnson (Col. 3, lines 1-16). It would been obvious to one of ordinary skill in the art, at the time of the invention, to apply the teaching of Johnson to the teaching of Davenport to improve system flexibility.

Allowable Subject Matter

6. Claims 3-5, 8, 11, 20-21, 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, the closest prior arts, Davenport and Khawer (US 2002/0122384), teach the claimed invention except that the signal processing device comprises: at least one programmable hardware device serving as a part of said resource and including a circuit structure capable of being redefined according to a set of a plurality of logic circuits which carry out basic calculations of at least a part of said signal processing; and a general-use processor serving as another part of said resource and configured to carry out at least another part of said signal processing by executing a predetermined program; and said controller determines respective shares of processing to be executed by said programmable hardware device and the general-use processor in accordance with the contents of said signal processing and controls said signal processing device to define, to the resource, the signal processing functions in accordance with determination of the share.

Regarding claims 4-5, the closest prior arts, Davenport and Khawer (US 2002/0122384), teach the claimed invention except that the signal processing device comprises: at least one programmable hardware device serving as at least a part of said resource and including a circuit structure capable of being redefined according to a set of a plurality of logic circuits which carry out basic calculations of at least a part of said signal processing; a first memory which stores a program indicating a procedure of said signal processing; a second memory which stores a plurality of circuit structure descriptions of said programmable hardware device corresponding to

processing contents respectively, the circuit structure descriptions being used for said signal processing device to carry out said signal processing; and a program sequencer configured to control the programmable hardware device and said second memory to revise the circuit structure descriptions of said programmable hardware device in accordance with the program read out from said first memory under a control of said controller.

Regarding claim 8, the closest prior arts, Davenport and Khawer (US 2002/0122384), teach the mobile radio communication apparatus according to claim 6 except that (a) said controller acquires structure description information provided from outside of said radio communication apparatus via said wireless transmitter-receiver device, the structure description information indicating a structure of said newly requested signal processing function; (b) said controller obtains a resource amount necessary for defining, to the resource, the newly required signal processing function of the resource with use of the acquired structure description information; (c) said controller compares said resource amount obtained and an initial resource amount preset in said signal processing device with each other; (d) said controller grasps said excessive source amount when the obtained resource amount is smaller than the initial resource amount; (e) said controller determines if it is possible to additionally define said newly requested signal processing function to said resource by comparing the grasped excessive resource amount with the resource amount necessary for defining, to the resource, the newly required signal processing function of the resource; and (f) said controller executes an additional definition when it is determined that the additional definition can be done.

Regarding claim 11, the closest prior arts, Davenport and Khawer (US 2002/0122384), teach the wireless system according to claim 9 except that the wireless transmitter-receiver

device is configured to perform transmission/reception of a radio signal with said information providing apparatus; and said information providing apparatus comprises: an another wireless transmitter-receiver device configured to perform transmission/reception of a radio signal with said mobile radio communication apparatus; and an another controller configured to control said another wireless transmitter-receiver device to provide the controller with information for defining, to the resource, the newly required signal processing function in accordance with the resource amount and the excessive residual resource amount, the resource amount and excessive residual resource amount being grasped based on information acquired by the another controller and containing a use status of said resource.

Regarding claims 20-21, the closest prior arts, Davenport and Khawer (US 2002/0122384), teach the mobile radio communication apparatus according to claim 16 except that the storage device stores a version of each of said plurality of software modules in the table as a use log of each of the software modules; and said controller controls said storage device to compare a version of at least one software module corresponding to a signal processing function to be executed by said signal processing device with the versions of the software modules stored in said storage device with reference to the table, and when the versions of these software modules are equal to each other, said controller reads the software modules from said storage device and assigns the read-out modules to said signal processing device.

Regarding claim 24, the closest prior arts, Davenport and Khawer (US 2002/0122384), teach the mobile radio communication apparatus according to claim 22 except that the second converter device converts at least one of the second data files stored in said storage device into a first data file having a file format corresponding to unique application software prepared for said

predetermined one mobile communication system, when said controller reads out the software module corresponding to said predetermined one of the radio communication systems from said storage device and assigns the read-out software module to said signal processing device.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy D Nguyen whose telephone number is 703-305-3283. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HN

Huy Nguyen

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